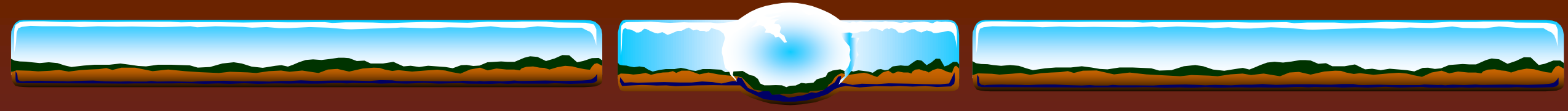




COVID-19 Clinical Update

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Disclosures



SARS-CoV-2 Virology

- ❖ **The D614G mutation in the SARS-CoV-2 spike protein reduces S1 shedding and increases infectivity (Zhang et al, Scripps, 6/12/20)**
 - ❖ **D614G Spike Protein Mutation**
 - ❖ **increases spike density 4 to 5-fold**
 - ❖ **Makes spikes more flexible and virus better able to bind to ACE2 receptor**
 - ❖ **Not present early in COVID-19 Pandemic now make up 70% of isolates**

<https://www.scripps.edu/news-and-events/press-room/2020/20200611-choe-farzan-sars-cov-2-spike-protein.html>



Natural History of Asymptomatic SARS-CoV-2 Infection

(Sakurai et al, NEJM, June 2020)

- ❖ 712 out of 3711 on the Diamond Princess infected with SARS-CoV-2
- ❖ 410 (58%) of the 712 were asymptomatic
- ❖ 96 of these were transferred from the ship to a hospital in Japan along with 32 negative cabin mates
 - ❖ 90 remained asymptomatic throughout their hospitalization
 - ❖ 11 developed symptoms within 4 days median time (pre-symptomatic)
 - ❖ Risk of being pre-symptomatic increased with age (OR 1.08 per year)



Neurologic Manifestations of COVID-19

- ❖ **Neuropathological Features of COVID-19** (Solomon et al, NEJM 6/12/2020)
 - ❖ Autopsy series of 18 consecutive patients who died of COVID at BWH
 - ❖ Median age 62
 - ❖ All had confusional state or decreased arousal from sedation for ventilation
 - ❖ CT done on 3 patients- normal, a fourth had a resected brain tumor
 - ❖ All patients had acute hypoxic injury in the cerebrum and cerebellum neuron loss
 - ❖ No thrombi or vasculitis noted; only one had leptomeningeal inflammation
 - ❖ **COVID-19 showed only hypoxic changes and did not show encephalitis or other specific brain changes referable to the virus**



Gastrointestinal Manifestations of COVID-19

- ❖ Prevalence of Gastrointestinal symptoms and Fecal Viral Shedding in Patients with Coronavirus Disease 2019 (Parasa et al, JAMA 2020)
 - ❖ Reviewed 1484 records in 23 published and 6 preprinted studies
 - ❖ 4805 Patients with mean age 52.2
 - ❖ 7.4% had diarrhea and 4.6% had Nausea/Vomiting
 - ❖ 14.6% had abnormal LFTs
 - ❖ Fecal Shedding (in 8 studies) was 40.5%



Treatment of COVID-19

- ❖ Hydroxychloroquine lost its FDA emergency use authorization
- ❖ **RECOVERY STUDY:** Press release from University of Oxford
2104 patients received 6 mg of PO or IV dexamethasone c/w 4321 controls
 - ❖ Dexamethasone reduced death by 35% in patients on ventilator (NNT =8)
 - ❖ Death reduced by 20% in those needing oxygen but not ventilated (NNT =25)
 - ❖ <http://www.ox.ac.uk/news/2020-06-16-low-cost-dexamethasone-reduces-death-one-third-hospitalised-patients-severe>



PPE truly works!

- ❖ Use of PPE against COVID-19 by HCPs in Wuhan, China (Liu et al, BMJ 6/2/2020)
- ❖ 420 HCPs (116 doctors, 304 nurses) deployed to COVID care unit
 - ❖ All received appropriate PPE and worked Jan 24 through April 7, 2020
 - ❖ Average age 35.8 years-old and 68.1% were women
 - ❖ All had direct patient contact and did aerosolizing procedures
 - ❖ All were PCR and IgG and IgM negative for Sars-CoV-2 after deployment



When the Dust Settles: Preventing a Mental Health Crisis in COVID-19 Clinicians

- ❖ “Foundational set of principles to use as guidance for building internal support for the trauma caused by the pandemic”: (Kiser and Bernacki, Ann Intern Med, 6/9/2020)
 1. **Look Past the Illness:** Reach out to the family to remember who the patient is outside the illness
 2. **Foster Community:** Healing requires community
 - ❖ Weekly bereavement rounds: share grief about the death of our patients
 3. **Promote Vulnerability:** HCWs are not “superheroes”
 - ❖ Weekly Reflection Rounds- meet to discuss how we all make mistakes and have limits
 4. **Establish Boundaries and limits**
 - ❖ Scheduled time off mandated by leaders



More COVID-19 Training

- ❖ **CDC:** <https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html>
- ❖ **ACP Physician Handbook:** <https://www.acponline.org/clinical-information/clinical-resources-products/coronavirus-disease-2019-covid-19-information-for-internists>
- ❖ **UW Protocols:** <https://covid-19.uwmedicine.org/Pages/default.aspx>
- **UW IDEA Program:** <https://covid.idea.medicine.uw.edu/>
- **NIH Guidelines:** <https://covid19treatmentguidelines.nih.gov/>
- ❖ **Brigham and Women's Hospital:** covidprotocols.org

